

WHAT IS CLAIMED:

1 1. A first glass matrix composition
2 consisting essentially by mol percent of about:
3 55 < SiO₂ < 75;
4 5 < BaO < 30; and
5 2 < MgO < 22.

1 2. The first glass matrix composition of
2 claim 1, consisting essentially by mol percent of about:
3 60 < SiO₂ < 75;
4 15 < BaO < 30; and
5 7.5 < MgO < 12.5, to form a second glass matrix
6 composition.

1 3. A third glass matrix-ceramic particulate
2 composite consisting essentially by mol percent of about:
3 55 < SiO₂ < 65;
4 5 < BaO < 15;
5 25 < MgO < 35; and
6 a forsterite phase consisting of Mg₂SiO₄.

1 4. The glass matrix-ceramic particulate
2 composite of claim 3, consisting essentially by mol
3 percent of about:
4 57 < SiO₂ < 63;
5 7 < BaO < 13;
6 27 < MgO < 33; and
7 a forsterite phase consisting of Mg₂SiO₄.

1 5. The glass matrix composition of claim 1,
2 consisting essentially by mol percent of about:
3 $55 < \text{SiO}_2 < 75$;
4 $5 < (\text{BaO} + \text{SrO}) < 30$; and
5 $2 < \text{MgO} < 22$.

1 6. The glass matrix-ceramic particulate
2 composite of claim 3, consisting essentially by mol
3 percent of about:
4 $55 < \text{SiO}_2 < 65$;
5 $5 < (\text{BaO} + \text{SrO}) < 15$; and
6 $25 < \text{MgO} < 35$.

1 7. A method of making a glass matrix-ceramic
2 particulate third composite comprising the steps of:
3 (a) providing as a matrix glass, a finely
4 divided glass powder of the glass in the composition
5 range defined by claim 1;
6 (b) providing as a particulate phase, a finely
7 divided powder selected from the group consisting of a
8 high expansion ceramic, a metal, and mixtures thereof;
9 (c) intermixing the matrix glass with the
10 particulate phase in an organic vehicle; and
11 (d) firing the intermixed materials to a
12 sealing temperature from 1100 to 1250°C.

1 8. The method of claim 7, wherein the
2 particulate phase comprises a ceramic particulate.

1 9. The method of claim 8, wherein the
2 ceramic particulate comprises a forsterite phase
3 consisting of Mg_2SiO_4 .

1 10. The method of claim 7, wherein the step of
2 providing a particulate phase comprises the step of
3 providing a finely divided powder of a high expansion
4 metal to form an interconnecting and current collecting
5 material.

1 11. The method of claim 10, wherein the step
2 of providing a finely divided powder comprises providing
3 silver.

1 12. The method of claim 10, wherein the step
2 of providing a finely divided powder comprises providing
3 ferritic stainless steel.

Act B

00040000000000000000000000000000